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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/965,685

09/27/2001

Satoshi Hasegawa

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,685

Applicant(s)

HASEGAWA ET AL.

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Priority to Japanese Patent Application No. 2000-300861 (Sept. 29, 2000) is claimed.

Preliminary Amendment

By Preliminary Amendment of December 14, 2001, claims 1-4 have been canceled and new claims 5-10 have been added. Claims 5-10 are pending in this Application.

Response to Arguments

Applicant's arguments filed 4 November 2003 have been fully considered but they are not persuasive for the reasons as stated in the following rejections.

Claim Objections

Claim 9 (amended) objected to because of the following informalities: The limitation "operable to be divided" is awkward. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (US 5,514,503).

Per claims 5 (amended)-6: Evans has the step of forming color filters that include a plurality of colors (Col. 7, Lines 65-67) at a first predetermined pitch on a front side of a

Art Unit: 2871

substrate (the color filters are filled into recesses, 11, and then transferred to a transfer layer, 14, and the transfer layer is then adhered to a substrate, 12, See Figure 4, See Col. 8, Lines 1-11).

Evans has the step of transferring a coating liquid (used for forming a black matrix into a desired pattern) from an imaging roll onto a transfer layer (the transfer layer has a series of recesses corresponding to recessed patterns for the formation of the black matrix)(Col. 8, Lines 38-43).

Evans has the step of transferring coating liquid (black matrix) all onto a substrate said coating liquid thereby forming a film on said substrate as noted.

Evans does not appear to explicitly specify that at least two of (or all three): a first predetermined pitch of the color filters of the same color, a second pitch of meshes formed on a surface of an anilox roller, and a third pitch of meshes formed on a surface of a projection are substantially equal.

However, in Evans, the black matrix patterning roller (18) contacts the transfer layer (14) to transfer the cured or otherwise hardened black matrix pattern (10) from recessed pattern (20) on patterning roller (18) to transfer layer (14) on collector roll (16).

Specifically, in Evans, the black matrix pattern must have a pitch corresponding with pitches of transfer layer and roller for precision in defining the edges of the black matrix pattern.

The problem to be solved in Evans, in part, is the need for precisely defined black matrix edges (Col. 4, Lines 35-41) which Evans accomplishes by precisely aligning the black matrix-raised pattern with roller and transfer layer patterns.

Turning to the issue of color filters, Evans furthermore goes on to teach that registration is critical in color liquid crystal displays and that individual color patterns (with reference to

Art Unit: 2871

Figure 5)(color patterns 52a, 52b, and 52c) are deposited within respective cells within a black matrix pattern (Col. 9, Lines 29-50 and Col. 10, Lines 38-48). In Figure 5, the pattern roll (50) has three ink receiving regions (52a, 52b, and 52c) which receive ink to form the blue, green, and red colored ink patterns (Col. 9, Lines 29-38). Inking rolls then apply the correct colored ink from ink metering rolls (56) to each of the three ink receiving regions of pattern roll (Id.). The inking rolls are movable to and from a contacting position with pattern roll to enable each colored ink to be applied only to the appropriate ink receiving region (Id.).

Following the logic of Evans, the color filter patterns must have pitches equivalent to those of the transfer layer and roller because the color filters are formed in the recesses defined by the black matrix (Col. 8, Lines 1-11).

Furthermore, Evans suggests that the pitches of regions (Applicant's "meshes") must be substantially equal because each color is deposited into respective precisely defined regions.

Please note that in considering the disclosure of a reference, it is proper to take into account not only the specific teachings of the reference but the inferences which one skilled in the art would reasonably be expected to draw therefrom (MPEP 2144.01).

One of ordinary skill in the art would have reasonably be expected to infer that the regions of pattern roll, ink receiving regions, inking rolls, and metering rolls would likely be substantially equal for the purpose of depositing colored inks within respective ink receiving regions – especially since Evans is drawn to accurate registration.

Evans is evidence that ordinary workers in the field of electro-optical devices and flexographic processes that one of ordinary skill in the art would have had the reason, suggestion, and motivation to have meshes substantially equal to each other for accurate

Art Unit: 2871

registration and also to reduce the likelihood of misalignment because the Evans invention is drawn to a two rolls for fewer mechanical parts to align (Col. 10, Lines 27-37).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have at least two (or all three) of a predetermined pitch of color filters, a second pitch of meshes formed on a surface of an anilox roller, and third pitch of meshes formed on a surface of a letterhead projection substantially equal for the precise alignment of color filters, for precision in defining the edges of a black matrix for maximum contrast, and accurate registration.

Per claim 7: Evans has an alignment film for aligning or orienting liquid crystal molecules (Col. 1, Lines 32-33).

Per claim 8: Evans has a transfer layer that acts as a dummy substrate for transferring the black matrix and color filters onto the substrate (Col. 5, Lines 20-22).

Claims 9 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (US 5,514,503) in view of Majima (US 5,724,110).

Per claims 9 (amended) and 10: Evans has the steps of forming a color filter at a first predetermined pitch on discrete regions of said substrate (ink receiving surfaces, Col. 9, Lines 39-51), forming a planarizing (overcoating) film on said color filter, forming an electrode pattern on said planarizing film, and forming an alignment film (Col. 1, Lines 17-35). Evans has the step of subjecting a substrate to flexography as noted throughout Evans.

Evans has the step of forming color filters that include a plurality of colors (Col. 7, Lines 65-67) at a first predetermined pitch on a front side of a substrate (the color filters are filled into

Art Unit: 2871

recesses, 11, and then transferred to a transfer layer, 14, and the transfer layer is then adhered to a substrate, 12, See Figure 4, See Col. 8, Lines 1-11).

Evans has the step of transferring a coating liquid (used for forming a black matrix into a desired pattern) from an imaging roll onto a transfer layer (the transfer layer has a series of recesses corresponding to recessed patterns for the formation of the black matrix)(Col. 8, Lines 38-43).

Evans has the step of transferring coating liquid (black matrix) all onto a substrate as noted.

It may be implied in Evans, that first and second terminal regions are formed along edges of discrete regions of said substrate, said edges not containing an overcoating film and alignment film because Evans is concerned with accurate registration as previously noted.

Evans does not appear to have the step of cutting a substrate into a plurality of discrete substrates containing said color filters.

Majima has the step of cutting a large substrate into a plurality of substrates (Col. 7, Lines 24-30) at least for increased yield.

Majima is evidence that ordinary workers in the field of liquid crystal devices would have had the reason, suggestion, and motivation to divided substrates into a plurality of discrete substrates for at least increased yield.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Evans in view of Majima to cut several substrates from one large substrate for increased yield.

Evans does not appear to specify that at least two of (or all three): a first predetermined pitch of the color filters, a second pitch of meshes formed on a surface of an anilox roller, and a third pitch of meshes formed on a surface of a projection are substantially equal; however, in Evans, the black matrix patterning roller (18) contacts the transfer layer (14) to transfer the cured or otherwise hardened black matrix pattern (10) from recessed pattern (20) on patterning roller (18) to transfer layer (14) on collector roll (16).

Specifically, in Evans, the black matrix pattern must have a pitch corresponding with pitches of transfer layer and roller for precision in defining the edges of the black matrix pattern.

The problem to be solved in Evans, in part, is the need for precisely defined black matrix edges (Col. 4, Lines 35-41) which Evans accomplishes by precisely aligning the black matrix-raised pattern with roller and transfer layer patterns.

Turning to the issue of color filters, Evans furthermore goes on to teach that registration is critical in color liquid crystal displays and that individual color patterns (with reference to Figure 5)(color patterns 52a, 52b, and 52c) are deposited within respective cells within a black matrix pattern (Col. 9, Lines 29-50 and Col. 10, Lines 38-48). In Figure 5, the pattern roll (50) has three ink receiving regions (52a, 52b, and 52c) which receive ink to form the blue, green, and red colored ink patterns (Col. 9, Lines 29-38). Inking rolls then apply the correct colored ink from ink metering rolls (56) to each of the three ink receiving regions of pattern roll (Id.). The inking rolls are movable to and from a contacting position with pattern roll to enable each colored ink to be applied only to the appropriate ink receiving region (Id.).

Following the logic of Evans, the color filter patterns must have pitches equivalent to those of the transfer layer and roller because the color filters are formed in the recesses defined by the black matrix (Col. 8, Lines 1-11).

Furthermore, again following the logic of Evans, the process may be adapted for use in the formation of an alignment film or overcoating film in any situation where precision alignment is crucial.

Furthermore, Evans suggests that the pitches of regions (Applicant's "meshes") must be substantially equal because each color is deposited into respective precisely defined regions.

Please note that in considering the disclosure of a reference, it is proper to take into account not only the specific teachings of the reference but the inferences which one skilled in the art would reasonably be expected to draw therefrom (MPEP 2144.01).

One of ordinary skill in the art would have reasonably be expected to infer that the regions of pattern roll, ink receiving regions, inking rolls, and metering rolls would likely be substantially equal for the purpose of depositing colored inks within respective ink receiving regions – especially since Evans is drawn to accurate registration.

Evans is evidence that ordinary workers in the field of electro-optical devices and flexographic processes that one of ordinary skill in the art would have had the reason, suggestion, and motivation to have meshes substantially equal to each other for accurate registration and also to reduce the likelihood of misalignment because the Evans invention is drawn to a two rolls for fewer mechanical parts to align (Col. 10, Lines 27-37).

Thus, it would have been obvious to one of ordinary skill in the art of liquid crystal devices at the time the invention was made to have at least two (or all three) of a predetermined

Art Unit: 2871

pitch of color filters, a second pitch of meshes formed on a surface of an anilox roller, and third pitch of meshes formed on a surface of a letterhead projection substantially equal for the precise alignment of color filters, for precision in defining the edges of a black matrix for maximum contrast, and accurate registration.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2871

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2289. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

January 26, 2004


ROBERT H. KIM
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